Mass Shootings and Mental Illness

Nick Anderson – *The Houston Chronicle, 2013*

Charles Camp, M.D.
Presentation Overview

• Frequency of mass shootings
• Media and public opinion
• Gun legislation and mental illness
• Investigate 3 inherent assumptions/stigmas of these policies
• Review major findings, draw conclusions
Learning Objectives

At the end of this lecture, participants will be able to:

• Characterize a “massing shooting”

• Summarize the prevailing public opinion on mental illness as it relates to violence and mass shootings

• List three main federal developments of gun legislation as it relates to mental illness

• Discuss the findings in the literature on the relationship between mental illness and violence

• Recall the statistics on mass shootings perpetrated by the mentally ill

• Describe psychiatrists’ ability to predict violence in the mentally ill
Disclosures

• None!
What is a “Mass Shooting”?  

No widely-accepted, clear definition

- Closest we have - FBI Definition (2005):
  - “Mass Murder” - a single incident where 4 or more people (not including the shooter) are killed
    - Lowered to 3 by President Barack Obama in January 2013 in a federal mandate for an investigation into these events (shortly after the Sandy Hook Elementary shooting)

The Result? – widely varied statistics on frequency
Frequency of Mass Shootings

The San Bernardino shooting is the second mass shooting today and the 355th this year

Christopher Ingraham, *The Washington Post*, 12/02/15
ShootingTracker.com: crowdsourced mass shooting tracker

“Mass Shooting” – 4 or more victims injured or killed, can include the shooter

FBI Definition – 4 or more people killed, not including the shooter
Frequency of Mass Shootings

How Many Mass Shootings Are There, Really?

By MARK FOLLMAN	DEC. 3, 2015

The New York Times, 12/03/15
Frequency of Mass Shootings

Mother Jones database – more restrictive criteria:

• Compiled after Aurora, Colorado movie theater shooting on 07/20/12, including incidents 1982-Present

• Criteria:
  • Shooter took the lives of 4 or more people (not including himself)
    • 3 or more since January 2013
  • Single incident in a public place
  • Lone shooter (with some exceptions including the Columbine High School and San Bernardino shootings)
  • Excluded incidents related to armed robbery, gang violence, and domestic violence, focusing on the events where the prime motive was indiscriminate killing

Frequency of Mass Shootings

Findings from *Mother Jones* research:

- 104 mass shootings since 1982
- ~50% have taken place since 2011
  - Approximately 3x more frequent per 2014 Harvard School of Public Health
- 7 in 2015
- 6 in 2016
- 11 in 2017
- 9 in 2018 thus far

Frequency of Mass Shootings

Stephen Paddock, 64
10/01/17
Las Vegas, NV
58 killed

Dimitrios Pagourtzis, 17
5/18/18
Santa Fe, TX
10 killed

Nikolas Cruz, 19
2/4/18
Parkland, FL
17 killed
Media and Public Opinion

Guns Don't Kill People, the Mentally Ill Do
Ann Coulter | Jan 16, 2013

Published approximately 1 month after the shooting at Sandy Hook Elementary
Media and Public Opinion

Adam Zyglis – *The Buffalo News*
9/17/13 – 1 day after Washington Navy Yard Shooting

Nick Anderson – *The Houston Chronicle*
1/12/11 – 3 days after Tucson, AZ shooting
Media and Public Opinion

Billboard on Manhattan’s West Side Highway—August 2015

OVER 40M AMERICANS SUFFER FROM MENTAL ILLNESS.
SOME CAN ACCESS CARE...ALL CAN ACCESS GUNS.
-KENNETH COLE

#GunReform  #AreYouPuttingUsOn
## Media and Public Opinion

### Table 2. Public Attitudes about Mental Illness, Overall and among People with and without Experience with Mental Illness (N = 1530). *

<table>
<thead>
<tr>
<th>Item</th>
<th>Overall (N = 1530)</th>
<th>No Experience with Mental Illness (N = 752)</th>
<th>Experience with Mental Illness (N = 765)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Perceived dangerousness and social distance</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do you agree or disagree that people with serious mental illness are, by far, more dangerous than the general population? (% agree)</td>
<td>45.6</td>
<td>46.3</td>
<td>44.8</td>
</tr>
<tr>
<td>Do you agree or disagree that locating a group home or apartment for people with mental illness in a residential neighborhood endangers local residents? (% agree)</td>
<td>31.8</td>
<td>33.5</td>
<td>30.1</td>
</tr>
<tr>
<td>Would you be willing or unwilling to have a person with serious mental illness start working closely with you on a job? (% willing)</td>
<td>28.6</td>
<td>22.0</td>
<td>35.2‡</td>
</tr>
<tr>
<td>Would you be willing or unwilling to have a person with serious mental illness as a neighbor? (% willing)</td>
<td>33.1</td>
<td>26.3</td>
<td>39.9‡‡</td>
</tr>
</tbody>
</table>

Media and Public Opinion

Factors to blame in mass shootings:

- 80% of respondents cited failure of mental health system as at least a “fair amount” to blame for mass shootings
- 61% easy access to guns
- 66% drug use

80% of respondents cited failure of mental health system as at least a “fair amount” to blame for mass shootings

### Mass shootings sign of mental health or gun law failures?

Do you think that mass shootings in this country are more a reflection of problems identifying and treating people with mental health problems or inadequate gun control laws?

<table>
<thead>
<tr>
<th>Mental health problems</th>
<th>0</th>
<th>10</th>
<th>20</th>
<th>30</th>
<th>40</th>
<th>50</th>
<th>60</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gun control laws</td>
<td>23</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Both (Vol.)</td>
<td>10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Neither/No opin</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Table 1. American’s Perception of Violence as Part of Mental Illness

<table>
<thead>
<tr>
<th>Responses to What Is Mental Illness</th>
<th>Star 1950 %</th>
<th>GSS 1996 %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Violent, Dangerous, Frightening</td>
<td>7.20</td>
<td>12.10</td>
</tr>
<tr>
<td>Describes Violent Psychosis</td>
<td>6.80</td>
<td>12.40</td>
</tr>
</tbody>
</table>

Why do we care?

Public opinion that the mentally ill are dangerous

Laws which restrict the rights of the mentally ill
Gun Legislation and Mental Illness

3 Federal Developments:

1. Gun Control Act (1968)
Gun Legislation and Mental Illness

1. Gun Control Act (1968)
   • Passed in response to several high-profile political assassinations (including JFK and MLK)
   • Prohibits sale/transfer of firearms/ammunition to anyone who has been:
     • “Adjucated as a mental defective” – danger to themselves/others or lack mental capacity to manage their affairs due to mental illness
     • “Committed to any mental institution” involuntarily
   • Included no organized system to enforce the law

- Established requirement for federally-licensed firearm dealers to perform **background checks** on all purchasers
- Named after former Whitehouse Press Secretary James Brady - shot and paralyzed during attempted assassination on President Reagan in 1981
“the greatest love offering in the history of the world”

• Became obsessed with *Taxi Driver* (1976)
• Fixated on Jodi Foster, following her to Yale and stalking her
• Attempted to assassinate Ronald Reagan outside of Hilton Hotel in Washington D.C. to win her affection
• Found not guilty by reason of insanity
• Institutionalized at St. Elizabeths Hospital in Boston, released September 2016
• Diagnosed with schizotypal, borderline, and narcissistic personal disorders, MDD, psychosis NOS
3. Establishment of NICS (National Instant Criminal Background Check System) in 1998

- Federal background check system used by FBI – accesses criminal databases (mental health, drug abuse, domestic violence, criminal records)
- 2007 – NICS Improvement Amendments Act passed after Virginia Tech shootings – financially incentivized reporting to the system
Gun Legislation and Mental Illness

To date, 99% of mental health records in NICS have not resulted in a federal gun denial.

Mental health records accounted for 7% of federal gun-disqualifying records in 2007.

Mental health records accounted for 28% of federal gun-disqualifying records in 2013.

2018: 5.2 million

> 1600% increase in the number of mental health records in the NICS since the Virginia Tech shooting
Beyond federal law, state initiatives also apply:

- **New York SAFE Act (Passed 1/15/13)**
  - “Secure Ammunitions and Firearms Enforcement Act”
  - Passed in response to shooting at Sandy Hook Elementary on 12/14/12
  - Mandates mental health professionals to report patients “likely to engage in conduct that would result in harm to self or others”
  - State processes report and patient added to “no-guns” list (and any guns they currently own are seized)
  - By 10/19/14, ~35,000 individuals on the list
Inherent Assumptions

1. Mental illness is a risk factor for violence
2. Mass shootings are perpetrated by the mentally ill
3. Psychiatrists and other mental health professionals can reliably predict violence in their patients
1. Mental Illness and Violence

**Violence and Psychiatric Disorder in the Community: Evidence From the Epidemiologic Catchment Area Surveys**

- First large-scale epidemiologic study (1990) - ~10,000 respondents
- Assessed for:
  - Mental illness (within past 1 year) – psychotic, major affective, and anxiety disorders
  - Violence (within past 1 year) - domestic, child abuse, assaultive acts (minor through major, with or without weapons)
  - Demographic factors – age, gender, socioeconomic status
# 1. Mental Illness and Violence

Is mental illness an independent risk factor for violence? – Yes

<table>
<thead>
<tr>
<th>1 year violence prevalence</th>
<th>General Population</th>
<th>Mental Illness Alone</th>
<th>Substance Abuse Only</th>
<th>Mental Illness and Substance Abuse</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2.1%</td>
<td>7.29%</td>
<td>20.85%</td>
<td>23.97%</td>
</tr>
<tr>
<td>Odds Ratio</td>
<td>--</td>
<td>3.94</td>
<td>13.67</td>
<td>16.79</td>
</tr>
</tbody>
</table>
1. Mental Illness and Violence

1 year violence risk in ECA study stratified by diagnosis

1. Mental Illness and Violence

Attributable Risk – reduction in incidence if risk factor was completely removed (based on population size and risk magnitude)

<table>
<thead>
<tr>
<th>Mental Illness Alone</th>
<th>Substance Abuse Alone</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.35%</td>
<td>33.97%</td>
</tr>
</tbody>
</table>

(by comparison, 47-74% for suicide)

National Center for Health Statistics – 5% of 120,000 gun-related killings in U.S. between 2001-2010 perpetrated by the mentally ill

1. Mental Illness and Violence

Young Male
Low SES
Drug use

Highly predictive of violence regardless of mental illness

Mental illness in the absence of these factors – very low predictive value for violence

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### Table 1
Percent of respondents reporting violent behavior by sex, age, and socioeconomic status

<table>
<thead>
<tr>
<th>Sex and age</th>
<th>Weighted N of respondents</th>
<th>Socioeconomic status²</th>
<th>0-25</th>
<th>26-50</th>
<th>51-75</th>
<th>76-100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male 18 to 24</td>
<td>1,600</td>
<td>16.09</td>
<td>11.68</td>
<td>8.06</td>
<td>6.05</td>
<td></td>
</tr>
<tr>
<td>25 to 44</td>
<td>1,278</td>
<td>7.65</td>
<td>6.23</td>
<td>4.57</td>
<td>2.56</td>
<td></td>
</tr>
<tr>
<td>45 to 64</td>
<td>1,272</td>
<td>3.34</td>
<td>2.00</td>
<td>2.14</td>
<td>.29</td>
<td></td>
</tr>
<tr>
<td>65 and over</td>
<td>567</td>
<td>.20</td>
<td>.30</td>
<td>.00</td>
<td>.00</td>
<td></td>
</tr>
<tr>
<td>Female 18 to 24</td>
<td>1,635</td>
<td>9.11</td>
<td>5.01</td>
<td>2.46</td>
<td>3.27</td>
<td></td>
</tr>
<tr>
<td>25 to 44</td>
<td>1,377</td>
<td>3.92</td>
<td>3.47</td>
<td>1.77</td>
<td>1.17</td>
<td></td>
</tr>
<tr>
<td>45 to 64</td>
<td>1,472</td>
<td>.93</td>
<td>.25</td>
<td>.54</td>
<td>1.01</td>
<td></td>
</tr>
<tr>
<td>65 and over</td>
<td>822</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td></td>
</tr>
</tbody>
</table>

¹Weighted Ns are rounded; percentages may not correspond to whole numbers.
²Scores based on occupation, education, and income ranking; lower scores indicate lower status.

1. Mental Illness and Violence

Other factors independently associated with violence in the mentally ill:

- Substance abuse
- Exposure to community violence
- Violent victimization (physical abuse) before the age of 16
- Homelessness
- Cohabitation

1. Mental Illness and Violence

MacArthur Violence Risk Assessment Study (1998)

- 1136 patients discharged from acute inpatient psych facilities
- Followed for 1 year monitoring for violence (self-report, collateral, police reports)
- Compared to 519 neighbors living in the same area as the patients (controlling for some environmental factors)

Result: Mental illness only vs. neighbors → No significant difference in violence
1. Mental Illness and Violence

2001 study monitored a population of 172 schizophrenics in L.A. over 3 years and found:

• 65 – 130% more likely to be victimized
• At least 14x more likely to suffer violent victimization than to be arrested for a violent crime

2018 Meta-Analysis (de Vries et al.):

• 20% prevalence of violent victimization in adults with psychotic disorders
• 4-6x more likely to be victimized than the general population
2. Mental Illness and Mass Shootings

But what about mass shootings?

Reports suggest ~60% of perpetrators since 1970 displayed symptoms of mental illness before committing their crime.

Mother Jones Database:
- ~50% showed prior signs of mental illness
- ~20% did not
- ~30% unknown/unclear

2. Mental Illness and Mass Shootings

Selective Mutism,
Social Anxiety Disorder,
MDD (with SI/HI)

James Holmes – Aurora, CL movie theater (2012)
Schizoaffective Disorder,
Schizotypal Personality Disorder

Adam Lanza – Sandy Hook Elementary (2012)
Asperger Syndrome, OCD
2. Mental Illness and Mass Shootings

The Bigger Picture

2017 U.S. Gun Deaths

Total Homicides: ~15,000
(\textit{gunviolencearchive.org})

Mass Shootings: 117 (0.8%)
(\textit{Mother Jones Database})

Mass shootings are \textbf{extremely} rare. Far too rare for predictive/preventative validity.
2. Mental Illness and Mass Shootings

Mass Shooting Indicators/Red Flags:
• Violent fantasies/writings
• Fascination with weapons
• Socially isolated
• Suicidal ideation or attempts
• Interest in other shootings
• Imitating murderers (dress/appearance)
• Drug use
• Mental illness (depression, psychosis)
• History of violence
• Paranoia

Cluster of indicators should raise suspicion and prompt evaluation/intervention

BUT

For every perpetrator with these factors, there’re thousands more that fit but never commit

3. Psychiatrists can predict violence

Risk Assessment – assessing dangerousness and the probability that an individual will act violently

Methods:
- Clinical Judgment – physician’s impression based on individual clinical evaluation and experience/knowledge
- Actuarial – algorithmic, objective “checklists” for known statistical risk factors
- Structured Professional Judgment – combination of the two
3. Psychiatrists can predict violence

Studies Show:

- Clinical Judgement – slightly better than a coin-flip
- Actuarial /Structured Clinical Judgement – high negative predictive value (91%), low-moderate positive predictive value (41%)
  - However - time consuming, expensive, and not standard practice

Bottom Line: No, psychiatrists are not able to accurately or consistently predict violence in the mentally ill

Let’s Review – Take Home Points

Mental Illness and Violence:

• Yes, mental illness is an independent risk factor for violence (4:1 OR)
• However – vast majority of mentally ill are not violent (>95% of violent crime in U.S. perpetrated by those without mental illness)
• Many other factors involved – substance abuse, low SES, young age, male, environmental exposure to violence, victimization, homelessness
• Mentally ill individuals are much more likely to be violently victimized than to commit a violent crime
Let’s Review – Take Home Points

Mental Illness and Mass Shootings:
• Mass shooters do have higher rates of mental illness (~60%) than the typical perpetrator of violence, though not causal link has been established
• However – mass shootings are extremely rare and have essentially no potential for statistical modeling or predictability
• Thus – mass shooters do not accurately represent the mentally ill as a broad group

Efficacy of Risk Assessment:
• Psychiatrists’ clinical judgement is better than chance, but not by much
• Actuarial assessments are moderately better, especially at ruling out non-violent individuals
• However – these assessment tools are not standard practice, and they still have low-moderate positive predictive values for violence
Conclusions

• Mass shootings perpetuate the stigma of mental illness in our society
• The media overemphasizes the role of mental illness in violent behavior and mass shootings, which colors public perception
• Much of current gun legislation was passed reflexively after mass shootings, which are rare and lack any statistical predictability
• Current legislation generalizes mental illness, affecting millions who will never go on to be violent
• Psychiatrists are empowered to make decisions about gun ownership despite limited risk assessment abilities
Conclusions

• Still, mental illness is certainly a factor in violence and mass shootings – mental health care is a worthwhile target for improvement

• Goal is for evidence-based policies/legislation that don’t unnecessarily infringe on the rights and privacy of the mentally ill at large
Questions?

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References


References